

Application No. 10/617,981
Amendment dated October 28, 2004
Reply to Office Action of October 1, 2004

Amendments to the Claims:

Claim 1 (currently amended): A flashlight illuminator for providing a concentrated light beam comprising:

an elongate body including a power source;

an on/off switch;

an LED attached to one end of said body and engaged with said power source;

a light collecting and magnifying barrel attached at a first end to said one end of said body and encasing said LED;

said barrel carrying at a second end a lens forming a cavity between said lens and said LED;

a reflector within said cavity engaged about an inner surface of said barrel and extending between said LED and said lens wherein:

light rays emitted from said LED are collected and reflected by said reflector on to said lens, said lens magnifying and directing said collected light rays along an elongated axial path in a condensed concentrated beam pattern having a diameter of between 2 inches and 120 inches at a distance of up to 150 feet.

Claim 2 (currently amended): The flashlight illuminator of claim 1 wherein said lens is a plano-convex lens. ~~with the convex side surface located outside said cavity.~~

Claim 3 (currently amended): The flashlight illuminator of claim 2 wherein said convex side of said lens is located outside said cavity and has a radius of curvature of

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between .360 and 1.765 inches.

Claim 4 (original): The flashlight illuminator of claim 1 wherein said cavity is between .5 and 1.5 inches in length.

Claim 5 (original): The flashlight illuminator of claim 4 wherein said cavity length is fixed.

Claim 6 (original): The flashlight illuminator of claim 1 wherein said cavity length is adjustable.

Claim 7 (original): The flashlight illuminator of claim 1 wherein said reflector comprises a resilient sleeve which resiliently engages against said inner surface of said barrel.

Claim 8 (currently amended): The flashlight illuminator of claim 1 ~~wherein said barrel includes an inner~~ including a raised ring extending inwardly from an inner surface of said barrel adapted to fit over said LED and engage with said first end to precisely position said lens relative to said LED.

Claim 9 (original): The flashlight illuminator of claim 1 wherein said barrel is stepped along its length.

Claim 10 (original): The flashlight illuminator of claim 9 wherein said step is about .25 inches in height.

Claim 11 (original): The flashlight illuminator of claim 9 wherein the diameter of said barrel is greater at said second end.

Claim 12 (original): The flashlight illuminator of claim 1 wherein said first end of said barrel is pressure fit into engagement with said body.

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Claim 13 (original): The flashlight illuminator of claim 1 wherein said lens projects a concentrated beam pattern of light over a distance at least 10 times the distance of beam projection of said LED absent said barrel, said lens and said reflector.

Claim 14 (original): The flashlight illuminator of claim 1 wherein said body comprises a penlight.

Claim 15 (original): A flashlight illuminator for providing a concentrated light beam comprising:

an elongate body including a power source;

an on/off switch;

an LED attached to one end of said body and engaged with said power source;

a light collecting and magnifying barrel attached at a first end to said one end of said body and encasing said LED;

said barrel carrying at a second end a plano-convex lens forming a cavity within said barrel between said lens and said LED with said convex side of said lens being outward of said cavity,

said lens having a focal length of between .5 and 1.5 inches;

a reflector within said cavity covering an inner surface of said barrel and extending between said LED and said lens wherein:

light rays emitted from said LED are collected and reflected by said reflector on to said lens, said lens magnifying, directing said collected light rays along

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said focal length in a condensed concentrated beam pattern of light.

Claim 16 (currently amended): An adapter for a flashlight having a casing and an LED light source at one end comprising:

a tubular housing having an inner surface and carrying at one end a magnifying lens and at a second end ~~an inner~~ a raised ring extending inwardly from said inner surface and a securing portion, said ring and said lens defining a focal length;

a reflective surface arranged between said magnifying lens and said ring, said reflective surface covering said inner surface of said housing over said focal length;

said securing portion being formed outwardly of said raised ring at said second end, whereby,

said securing portion is adapted to engage over said casing of said flashlight with said raised ring contacting said one end positioning said LED light source to extend through said raised ring so that light rays emitted from said LED are deflected and concentrated over said focal length within said tubular housing, and projected through said lens in the form of a condensed light beam.

Claim 17 (original): The adapter according to claim 16 wherein said tubular housing comprises a first and second portion inter-connected with said housing between said lens and said raised ring, said first and second portions being axially adjustable.

Claim 18 (original): The adapter according to claim 16 wherein said lens is a plano-convex lens with the convex side surface directed outwardly.

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Claim 19 (original): The adapter according to claim 18 wherein said convex side of said lens has a radius of curvature of between .360 and 1.765 inches.

Claim 20 (original): The adapter according to claim 16 wherein said focal length is between .5 and 1.5 inches in length.